

Amendment

FOR THE CLAIMS

Claim 1. (Original) A method of cleaning a dual damascene structure, comprising:
providing a substrate, wherein a first metal layer, a cap layer, and a dielectric layer
are formed in sequence on the substrate;

forming a dual damascene opening in the dielectric layer and the cap layer to
expose the first metal layer;

performing a post-etching cleaning step to clean the dual damascene opening
using a fluorine-based organic solvent; and

sputtering an argon gas to clean the dual damascene opening before forming a
second metal layer in the dual damascene opening.

Claim 2. (Original) The method of claim 1, wherein the fluorine-based organic
solvent includes an organic solvent with fluoride acetate acid as a principal solvent.

Claim 3. (Original) The method of claim 2, wherein the fluorine-based organic
solvent has a chelating agent and an oxidizing agent.

Claim 4. (Original) The method of claim 1, wherein the fluorine-based organic
solvent includes an organic solvent with ammonium fluoride as a principal solvent.

Claim 5. (Original) The method of claim 4, wherein the fluorine-based organic
solvent has a chelating agent and an oxidizing agent.

Claim 6. (Original) The method of claim 1, wherein a sputtering power is between
75 and 300 watts to sputter the argon gas in the dual damascene opening.

Claim 7. (Original) The method of claim 1, wherein a sputtering time is about 10
to 30 seconds to sputter the argon gas in the dual damascene opening.

Claim 8. (Original) The method of claim 1, wherein the material of the cap layer is
silicon nitride (SiN).

Claim 9. (Original) The method of claim 1, wherein the material of dielectric layer
has a low dielectric constant (low-k), and is silicate based or an organic material.

Claims 10-20 (Withdrawn)